

## CLAIMS

What is claimed is:

1. A method for designing a computer system, comprising:  
selecting an amount of internal memory for said computer system; and  
providing said amount of internal memory to a non-linear exponential function to calculate an input/output (I/O) transaction rate for transactions associated with a non-volatile memory subsystem appropriate for said amount of internal memory.
2. The method of claim 1 wherein said non-linear exponential function includes a parameter that defines an asymptotic limit for said I/O transaction rate.
3. The method of claim 2 wherein said non-linear exponential function defines a maximum I/O transaction rate.
4. The method of claim 3 wherein said non-linear exponential function includes a parameter that defines an exponential decay from said maximum transaction rate to said asymptotic limit as a function of an amount of internal memory.
5. The method of claim 4 wherein said non-linear function is of the form:  $a + e^{(c + bx)}$ , where x represents said amount of internal memory.
6. The method of claim 1 further comprising:  
selecting a number of storage peripherals to support said I/O transaction rate.

7. The method of claim 6 further comprising:  
selecting a number of buses for communication between said storage peripherals and said computer system to support said I/O transaction rate.
8. The method of claim 7 further comprising:  
selecting a number of interface cards to communicate with said storage peripherals to support said I/O transaction rate.
9. The method of claim 8 further comprising:  
looking up performance limitations associated with said storage peripherals, said buses, and said interface cards.
10. The method of claim 9 wherein said providing, said selecting a number of storage peripherals, selecting a number of interface cards, and said looking up performance limitations are performed by a software application.
11. The method of claim 1 wherein said selecting an amount of internal memory includes selecting a number of dual in-line memory modules (DIMMs) for said computer system.
12. A software application for designing a computer system, comprising:  
code for receiving an amount of internal memory for said computer system; and  
code for providing said amount of internal memory to a non-linear exponential function to calculate an input/output (I/O) transaction rate for transactions associated with a non-volatile memory subsystem appropriate for said amount of internal memory.
13. The software application of claim 12 wherein said non-linear exponential function includes a parameter that defines an asymptotic limit for said I/O transaction rate.

14. The software application of claim 13 wherein said non-linear exponential function defines a maximum I/O transaction rate.

15. The software application of claim 14 wherein said non-linear exponential function includes a parameter that defines an exponential decay from said maximum transaction rate to said asymptotic limit as a function of an amount of internal memory.

16. The software application of claim 15 wherein said non-linear function is of the form:  $a + e^{(c + bx)}$ , where x represents said amount of internal memory.

17. The software application of claim 12 further comprising:  
code for selecting a number of storage peripherals to support said I/O transaction rate.

18. The software application of claim 17 further comprising:  
code for selecting a number of buses for communication between said storage peripherals and said computer system to support said I/O transaction rate.

19. The software application of claim 18 further comprising:  
code for selecting a number of interface cards to communicate with said storage peripherals to support said I/O transaction rate.

20. The software application of claim 19 further comprising:  
code for looking up performance limitations associated with said storage peripherals, said buses, and said interface cards.

21. A system for designing a computer system, comprising:  
means for receiving a selection of an amount of internal memory for said computer system; and

means for providing said amount of internal memory to a non-linear exponential function to calculate an input/output (I/O) transaction rate for transactions associated with a non-volatile memory subsystem appropriate for said amount of internal memory.

22. The system of claim 21 wherein said non-linear exponential function includes a parameter that defines an asymptotic limit for said I/O transaction rate.

23. The system of claim 22 wherein said non-linear exponential function defines a maximum I/O transaction rate.

24. The system of claim 23 wherein said non-linear exponential function includes a parameter that defines an exponential decay from said maximum transaction rate to said asymptotic limit as a function of an amount of internal memory.

25. The system of claim 24 wherein said non-linear function is of the form:  $a + e^{(c + bx)}$ , where x represents said amount of internal memory.